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Date: December 3, 2007

Ms. Linda L. Cole, P.E.
NAVFAC MIDLANT, Code EV3
9742 Maryland Avenue
Building N-26, Room 3208
Norfolk, VA 23511-3095

Re: Naval Weapons Station-Yorktown NPL site, Yorktown, Va.
Closed MWR Skeet Range
Naval Supply Center - Cheatham Annex NPL site, Yorktown, Va.
Closed Marine Pistol and Rifle Range
Review of draft *Expanded Site Inspection Report*

Dear Ms. Cole:

Enclosed, please find the U.S. Environmental Protection Agency's (EPA's) comments pertaining to the review of the U.S. Navy's (Navy's) October, 2007 draft *Expanded Site Inspection Report* (ESI Report) for the Closed MWR Skeet Range, located the Naval Weapons Station-Yorktown (NWS-Yorktown) NPL site, and the Closed Marine Pistol and Rifle Range, located at the Naval Supply Center - Cheatham Annex (CAX) NPL site:

GENERAL COMMENTS

1. The ESI Report notes that the Marine Pistol and Rifle Range will be used for recreational activities, including a recreational vehicle (RV) park (Section 2.2.2). However, the ESI Report does not describe the anticipated future use of the Morale, Welfare, and Recreation (MWR) Skeet Range other than to state that residential use of the site is not anticipated (Page 4-5). The anticipated future use of the MWR Skeet Range should be described so that potential future receptors at this site can be identified, and risks to these receptors evaluated. It is noted that the initial human health risk screening in the ESI Report was conducted using conservative residential exposure assumptions; however, should additional risk assessment be necessary, a discussion of current and future land use and receptors will be important. Please revise the ESI Report to describe the anticipated future use of the MWR Skeet Range. This information should be presented in a discussion of current and future receptors at the sites.
2. The ESI Report does not include an exposure assessment, which is an important component of characterizing site risks. Since this is a screening level risk assessment, a full exposure assessment, as described in Section 6 of EPA's *Risk Assessment Guidance for Superfund (RAGS), Volume I, Part A* (December 1989) may not be necessary.

Additionally, the ESI Report should discuss the applicability of the exposure pathways included in the derivation of the EPA Region 3 risk-based concentrations (RBCs) to the potentially complete exposure pathways at the sites. If potentially complete exposure pathways exist at the sites which have not been considered in development of the RBCs, additional assessment should be conducted to quantify risks associated with these pathways. Please revise the ESI Report to include an exposure assessment for both the MWR Skeet Range and the Marine Pistol and Rifle Range. The applicability of the exposure pathways included in the derivation of the RBCs to the potentially complete exposure pathways at the sites should be described.

3. The ESI Report does not describe the data usability and reduction protocol prior to conducting the screening level risk assessments. For example, the ESI Report has not described how those samples with data qualifiers will be considered in the assessment. Additionally, the ESI Report has not described how duplicate samples will be evaluated. Chapter 5 of RAGS, Volume I, Part A presents pertinent information on evaluating a data set for purposes of a risk assessment. Please revise the ESI Report to present the data usability and reduction protocol used prior to conducting the risk assessments.
4. The EPA Region 3 RBC Table, dated April 2007, was used in the human health risk assessment (HHRA). It should be noted that the RBC Table was recently updated in October 2007. Subsequent revisions to the ESI Report should use the most recent RBC Table available.
5. The ESI Report does not evaluate potential migration of soil contaminants to groundwater. Typically, subsurface soil concentrations are compared to soil screening levels (SSLs) for migration to groundwater, such as those included in the EPA Region 3 RBC table. Please revise the ESI Report to include an evaluation of the soil data to assess the potential migration of soil contaminants to groundwater, or provide justification for not assessing this pathway.
6. The ESI Report does not provide an uncertainty analysis for the human health risk screening. As noted in RAGS, Volume I, Part A, "*it is important to fully specify the assumptions and uncertainties inherent in the risk assessment to place the risk estimates in proper perspective*" (Section 8.4). Uncertainties associated with exposure assumptions, toxicity values, or other factors should be presented. Please revise the ESI Report to include a presentation of the uncertainties associated with the risk assessments.
7. The cumulative corresponding carcinogenic risks calculated for the closed MWR Skeet Range surface soil and Marine Pistol and Rifle Range were $6.5\text{E-}05$ and $2.1\text{E-}05$, respectively, which are both above EPA's recommended risk management point of departure ($1\text{E-}06$). (Cumulative risk for the MWR Skeet Range was calculated using 95% upper confidence limits (UCLs) whereas risk for the Marine Pistol and Rifle Range was calculated using maximum detected concentrations [MDCs]). The cumulative hazard indices for both sites were below unity (1). The Navy is recommending no further action for both sites. However, since cumulative carcinogenic risk exceeded $1\text{E-}06$, it is recommended that discussion surrounding the current and anticipated future land use

assumptions (rather than the default residential use assumption considered for this assessment) be included in the ESI Report.

8. Field sampling forms have not been provided for any of the soil samples. Field sampling forms often provide information about the sites that is not necessarily discussed in the text of the document. These forms also serve as documentation of field events. For completeness and defensibility, please provide the field sampling forms for the soil samples that were collected at both of the sites.

SPECIFIC COMMENTS

9. **Section 3.1, Metal Detector Survey, Page 3-1:** This section discusses the metal detector surveys, but the methodology employed for the surveys has not been described. For example, if transects were used, the ESI Report should state this, and then describe the orientation and spacing of the transects, or present the transects on a site figure. Additionally, it is noted that metallic objects were detected around the location of the demolished skeet and trap throwing structures at the MWR Skeet Range but the specific location of this detection has not been identified on a site figure. The soil sample collected at this location also has not been specifically identified. Please revise the ESI Report to describe the methodology used to survey the two sites, and identify any metallic objects found on a site figure. The soil samples collected to assess the detections should also be identified.
10. **Section 4.1.3, Step 3 (Figure 4-1), Page 4-2:** It is noted that additional samples were collected in the drainage swale to evaluate the extent of polynuclear aromatic hydrocarbon (PAH) contamination, originally identified at sample location SS78. As shown on Figure 4-2, benzo(a)pyrene was also detected above the residential soil RBC in sample SS75 during the second round of sampling. It is not clear whether the extent of contamination in the drainage swale has been adequately defined as no samples have been collected further downstream of sample SS75. Section 2.1.2 had previously noted that surface runoff collects in this swale, eventually draining to the York River. It appears as if the decision logic for this site proceeded to the risk assessment without defining the extent of contamination in the drainage swale. Please revise the ESI Report to address why additional sampling was not conducted to assess the extent of PAH contamination downstream of sample location SS75, or propose additional assessment of this area. Additionally, please clarify whether standing water was observed in any portion of the drainage swale at the time of sampling.
11. **Section 4.1.4, Step 4 (Figure 4-1), Page 4-5:** Under the subheading Step 3, it is noted that EPA's ProUCL software (Version 4.00.02) was used to calculate 95% UCLs for some contaminants of potential concern (COPC). The outputs from this program have not been appended, so the 95% UCLs cannot be verified. Please revise the ESI Report to include the outputs of the ProUCL program.
12. **Table 4-9, Step 3 – Selection of Chemicals of Potential Concern for Surface Soil, MWR Skeet Range:** Under the UCL Rationale column, the number 5 is used to

document the rationale code. However, the notes provided on this table do not define the meaning of the rationale code. Please revise Table 4-9 to describe the UCL rationale for the number 5 code.

13. **Section 5.2, Marine Pistol and Rifle Range, Page 5-1:** The last paragraph mentions that arsenic detected at the Marine Pistol and Rifle Range may be attributable to the use of pesticides at CAX. The ESI Report did not include sampling results for pesticides, but the rationale for their exclusion, based on this information, is not clear. Please provide justification for not sampling for pesticides at the Marine Pistol and Rifle Range when it is stated that pesticides were used at CAX.

This concludes EPA's review of the Navy's October, 2007 draft *ESI Report* for the Closed MWR Skeet Range, located the NWS-Yorktown NPL site, and the Closed Marine Pistol and Rifle Range, located at the CAX NPL site. If you have any questions, please feel free to call me at (215) 814-3357,

Sincerely,



Robert Thomson, P.E., R.E.M.
Federal Facility Remediation (3HS11)

Cc: Wade Smith (VaDEQ, Richmond)
Dawn Ioven (USEPA, 3HS41)
Bruce Pluta (USEPA, 3HS41)